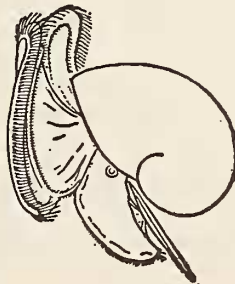


zoan species in Europe (THOMPSON, 1964) as compared with only one species—*Metridium senile* (Linnaeus, 1767)—in New England. Likewise, *Onchidoris bilamellata* (Linnaeus, 1767) preys on at least 4 intertidal barnacles in Europe whereas in New England, the ubiquitous *Balanus balanoides* (Linnaeus, 1758) appears to be its sole prey. Evidently, such annual species as *A. papillosa* and *O. bilamellata* exist in New England through the good fortune of being specialized to feed on prey species which themselves are highly tolerant of environmental instability.

In summary, this analysis suggests that in addition to physiological and ecological adaptations conferring tolerance to thermal instability, amphiboreal nudibranchs possess two ecological correlates: (1) broad feeding niches as measured by the number of prey species; (2) feeding specialization on transient, subannual prey species. The apparent feeding specificity of amphiboreal species in New England reflects the lowered diversity of possible prey species rather than a result of selective pressures favoring prey-specificity. In general, New England amphiboreal nudibranchs appear to be r-strategists in keeping with the severe environmental instability of the boreal climate in the northwest Atlantic.

Literature Cited

- BRUCE, J. R., J. S. COLEMAN & N. S. JONES
1963. Marine fauna of the Isle of Man. Liverpool Univ. Press, 307 pp.
- CHEETHAM, A. H. & J. E. HAZEL
1969. Binary (presence-absence) similarity coefficients. Journ. Paleont. 43 (5): 1130 - 1136
- CLARK, KERRY BRUCE
1971. Life cycles of New England nudibranch molluscs. Ph. D. thesis, Univ. Connecticut, Storrs, 94 pp.
- CLARKE, ARTHUR H.
1973. Aspects of molluscan zoogeography in Baffin Bay and the Greenland Sea. Bull. Amer. Malacol. Union (1972): 31 - 32
- EKMAN, SVEN
1954. Zoogeography of the Sea. Sedgewick & Jackson, Ltd., London, xiii+417 pp.; 121 text figs.
- FIELD, J. G. & G. MCFARLANE
1968. Numerical methods in marine ecology. I. A quantitative "similarity" analysis of rocky shore samples in False Bay, South Africa. Zool. Afr. 3: 119 - 137
- FRANZ, DAVID R.
1968. Occurrence and distribution of New Jersey Opisthobranchia. The Nautilus 82 (1): 7 - 12
1970. Zoogeography of northwest Atlantic opisthobranch molluscs. Mar. Biol. 7 (2): 171 - 180
- HAZEL, JOSEPH E.
1970. Binary coefficients and clustering in biostratigraphy. Geol. Amer. Bull. 81: 3237 - 3252
- LEMICHE, HENNINGO
1929. Gastropoda Opisthobranchiata. in: Zoology of the Faroes 53: 1 - 35
1938. Gastropoda Opisthobranchiata. in: Zoology of Iceland 4 (61): 1 - 54
1941. Gastropoda Opisthobranchiata, The Godthaab Expedition 1928. Medd. om Grønland 80 (7): 1 - 65
- LOVELAND, ROBERT E., GORDON HENDLER & GARY NEWKIRK
1969. New records of nudibranchs from New Jersey. The Veliger 11 (4): 418 - 420 (1 April 1969)
- MARCUS, EVELINE DU BOIS REYMOND
1972. Notes on some opisthobranch gastropods from the Chesapeake Bay. Chesap. Sci. 13 (4): 300 - 317
- MILLER, MICHAEL CHARLES
1961. Distribution and food of the nudibranchiate mollusca of the South of the Isle of Man. Journ. Anim. Ecol. 30: 95 - 116
- NYBAKKEN, JAMES WILLARD
1974. A phenology of the smaller dendronotacean, arminacean and aeolidacean nudibranchs at Asilomar State Beach over a twenty-seven month period. The Veliger 16 (4): 370 - 373 (1 April 1974)
- SCHMEKEL, RENATE LUISE
1968. Ascoglossa, Notaspidea und Nudibranchia im Litoral des Golfs von Neapel. Rev. Suisse Zool. 75 (1): 103 - 155
- SWENNEN, CHARLES
1961. Data on distribution, reproduction and ecology of the nudibranchiate Mollusca occurring in the Netherlands. Netherl. Journ. Sea Res. 1 (1 - 2): 191 - 240
- TARDY, JEAN
1962. Première liste concernant la faune des mollusques nudibranches et ascoglosses sur la côte nord-ouest de l'île de Ré (Charente-Maritime). Congr. Soc. Sav. 87: 1217 - 1227
- THOMPSON, THOMAS EVERETT
1964. Grazing and the life cycles of British nudibranchs. In Grazing in terrestrial and marine environments, D. J. Crisp, ed. British Ecol. Symp. No. 4: 275 - 297; 1 fig.



A New Cowrie Species from North West Australia

(Mollusca : Gastropoda)

BY

AL LOPEZ, S. J. AND CHU SHAN CHIANG

P. O. Box 120, Tainan, Taiwan 700

(1 Plate)

TAIWAN'S DEEP WATER fishermen, ranging southward to the west coast of Australia, have been responsible for many of its rare deep-water shell species being made available to collectors. None, however, surpasses the beauty of the animals whose shell is described herein. Altogether, there appear to be about 6 specimens of this new species known at present. The following new name is proposed for it:

Zoila perlae Lopez & Chiang, spec. nov.

(Figures 1a, 1b, 1c, and 2b)

Description, holotype: Shell medium large, solidly formed, though lightweight in construction; shell smooth, glossy; conspicuously abruptly, angularly humped dorsally, elevating almost vertically adapically, then tapering evenly to the front; shell is broad in relation to its length sub-centrally; terminal processes distinct, well developed, though barely protruding; base smooth, glossy, angling deeply inwardly adaxially; aperture almost straight, somewhat narrow centrally, becoming broader at either end, especially abapically; side margins fairly sharply angled; columella weakly dentate (17) throughout—outer lip-base broad, with numerous (23) small, clearly defined denticles thereon. Shell color ivory-white to light beige over all, including dorsum, base, lips and teeth, dorsum with numerous, irregular chestnut-brown spots and blotches; large, lengthened brown spots are visibly buried in marginal callus.

Measurements, holotype: L - 39.2; W - 28.4; H - 26.5 mm.

Measurements, paratype 1: L - 46.5; W - 33.7; H - 30.5 mm.

Measurements, paratype 2: L - 47.5; W - 32.2; H - 30.3 mm.

Type Locality: trawled at 182 to 274 meters of water, mud bottom, 18° to 25° S, paralleling the off-shore coast of North West Cape, West Australia [approximately 21° 00' S; 114° 10' W].

Holotype: Los Angeles County Museum, LACM No. 1706. Paratypes I & II are in the junior author's collection, Tainan, Taiwan.

Discussion: This new cowrie species appears to be completely distinct, perhaps most closely resembling *Zoila jeaniana* Cate, 1968 (Figure 2 a). It differs, however, in its more sharply elevated dorsum; in the ivory-beige base colors, rather than bright white. It has a more acutely depressed columellar base; a different arrangement of shell colors, and the shell is generally smaller in over-all dimension.

The name for this new cowry honors the wife of Chu-shan Chiang who was among one of the first to suspect the shell was new to science. The authors wish to thank Crawford N. Cate, Sanibel Island, Florida, for his assistance in the determination of this new species, and for his assistance with the manuscript.

Explanation of Figures 1 and 2

Figures 1a to 1c: *Zoila perlae* Lopez & Chiang, spec. nov. × 1¼
Figure 2a: *Zoila jeaniana* Cate, 1968 × ¾

Figure 2b: *Zoila perlae* Lopez & Chiang, spec. nov. × ¾
Figure 2c: *Zoila decipiens* (Smith, 1880) × ¾